AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A method of making a spectral filter comprising:

providing a substrate wafer of single-crystal (100)-oriented p-doped silicon ~~semiconductor~~ having a first surface and a second surface,

providing etching starting points at a first surface of said semiconductor wafer, and

electrochemically etching the substrate wafer beginning at said start points to produce a structured layer having pores with controlled depths defined at least partially therethrough, said pores having coherently modulated cross-sections at least over the part of said depth.

2. (original) The method of claim 1, wherein said etching start points compose a regularly-arranged array of depressions on the first surface of substrate wafer.

3. (original) The method of claim 1, wherein said etching start points are located by producing a photoresist mask on the first surface of the substrate wafer and by a subsequent etching of the first surface through said photoresist mask.

4. (currently amended) ~~The~~ A method of ~~claim 3~~ making a spectral filter comprising:

providing a substrate wafer of single-crystal semiconductor having a first surface and a second surface,

providing etching start points at a first surface of said semiconductor wafer, and

etching the substrate wafer beginning at said start points to produce a structured layer having pores with controlled depths defined at least partially therethrough, said pores having coherently modulated cross-sections at least over the part of said depth,

wherein said etching start points are located by producing a photoresist mask on the first surface of the substrate wafer and by a subsequent etching of the first surface through said photoresist mask, and

wherein said etching is chosen from the group consisting of chemical etching, reactive ion etching, and ion milling.

5. (original) The method of claim 4, wherein said chemical etching is chosen from the group consisting of alkaline etching and acidic etching.

6. (currently amended) The method of claim 1, wherein said ~~surface topology is~~ etching starting points are produced by disposing a layer of material with different chemical properties than those of wafer material on the first surface of substrate wafer, by producing a photoresist mask on the surface of said layer, by etching away the said chemically different material inside the photoresist mask openings and by etching the wafer surface through the thus-formed openings in said disposed chemically different material.

7. (currently amended) The method of claim 6, wherein said chemically different layer is silicon dioxide and is disposed by a step chosen from the group consisting of: thermal oxidation of the surface of wafer ~~in the oxygen-contained atmosphere~~, chemical vapor deposition, wet chemical oxidation and physical vapor deposition.

8. (original) The method of claim 6, wherein the said layer is a silicon nitride layer disposed by a step chosen from the group consisting of chemical vapor deposition and physical vapor deposition.

9. (currently amended) ~~The~~ A method of ~~claim 6~~ making a spectral filter comprising:

providing a substrate wafer of single-crystal semiconductor having a first surface and a second surface,

providing etching start points at a first surface of said semiconductor wafer, and

etching the substrate wafer beginning at said start points to produce a structured layer having pores with controlled depths defined at least partially therethrough, said pores having coherently modulated cross-sections at least over the part of said depth,

wherein said surface topology is produced by disposing a layer of material with different chemical properties than those of wafer material on the first surface of substrate wafer, by producing a photoresist mask on the surface of said layer, by etching away the said chemically different material inside the photoresist mask openings and by etching the wafer surface through the thus-formed openings in said disposed chemically different material, and

wherein said chemically different layer is removed from the first surface of the wafer after forming said surface topology in the wafer.

10. (cancelled) Please cancel claim 10 without prejudice or disclaimer.

11. (currently amended) The method of claim ~~10~~1, wherein said ~~silicon wafer is a (100) oriented wafer~~ electrochemical etching includes connecting the substrate as an electrode, contacting the first surface of the substrate with an electrolyte, setting a current between said electrodes, and continuing etching to form said pores extending to a desired depth substantially perpendicular to said first surface.

12. (currently amended) The method of claim ~~10~~1, wherein said ~~electrochemical etching occurs in~~ electrolyte is a fluoride-containing, acidic electrolyte.

13. (original) The method of claim 12, wherein said electrolyte contains hydrofluoric acid in a range of 1% to 50% by volume.

14. (original) The method of claim 12, wherein said electrolyte additionally contains an oxidizing agent.

15. (currently amended) The method of ~~claim 12~~ making a spectral filter comprising:

providing a substrate wafer of single-crystal semiconductor having a first surface and a second surface,

providing etching start points at a first surface of said semiconductor wafer,

etching the substrate wafer beginning at said start points to produce a structured layer having pores with controlled depths defined at least partially therethrough, said pores having coherently modulated cross-sections at least over the part of said depth,

wherein said electrochemical etching occurs in a fluoride-containing, acidic electrolyte, and

wherein said electrolyte additionally contains a hydrogen reducing agent selected from the group of chemicals consisting of ~~mono-functional~~ mono-functional alkyl alcohols, ~~tri~~ di-functional alkyl alcohols, and ~~tri-functional~~ tri-functional alkyl alcohols.

16. (currently amended) The method of ~~claim 12~~ making a spectral filter comprising:

providing a substrate wafer of single-crystal semiconductor having a first surface and a second surface,

providing etching start points at a first surface of said semiconductor wafer,

etching the substrate wafer beginning at said start points to produce a structured layer having pores with controlled depths defined at least partially therethrough, said pores having coherently modulated cross-sections at least over the part of said depth,

wherein said electrolyte is a fluoride-containing, acidic electrolyte, and,

wherein said electrolyte additionally contains a viscosity-modifying agent.

17. (currently amended) The method of ~~claim 12~~making a spectral filter comprising:

providing a substrate wafer of single-crystal semiconductor having a first surface and a second surface,

providing etching start points at a first surface of said semiconductor wafer,

etching the substrate wafer beginning at said start points to produce a structured layer having pores with controlled depths defined at least partially therethrough, said pores having coherently modulated cross-sections at least over the part of said depth,

wherein said electrolyte is a fluoride-containing, acidic electrolyte, and,

wherein said electrolyte additionally contains an electrical conductivity-modifying agent.

18. (currently amended) The method of ~~claim 12~~ making a spectral filter comprising:

providing a substrate wafer of single-crystal semiconductor having a first surface and a second surface,

providing etching start points at a first surface of said semiconductor wafer,

etching the substrate wafer beginning at said start points to produce a structured layer having pores with controlled depths defined at least partially therethrough, said pores having coherently modulated cross-sections at least over the part of said depth,

wherein said electrolyte is a fluoride-containing, acidic electrolyte, and,

wherein said electrolyte additionally contains a wetting agent.

19-21 (cancelled) Please cancel claims 19-21 without prejudice or disclaimer.

22. (currently amended) The method of ~~claim 21~~ making a spectral filter comprising:

providing a substrate wafer of single-crystal semiconductor having a first surface and a second surface,

providing etching start points at a first surface of said semiconductor wafer,

etching the substrate wafer beginning at said start points to produce a structured layer having pores with controlled depths defined at least partially therethrough, said pores having coherently modulated cross-sections at least over the part of said depth,

wherein said etching occurs in a fluoride-containing, acidic electrolyte, and,

wherein the electrolyte additionally contains at least one organic additive.

23. (original) The method of claim 22, wherein the said at least one organic additive is selected from the group consisted of acetonitrile, dimethylformamide, dimethylsulfoxide, diethylenglycol, formamide, hexamethylphosphoric triamide, isopropanol, triethanolamine, 2-methoxyethyl ether, triethylphosphite, and triethyleneglycol dimethyl ether.

24. (currently amended) The method of claim ~~21~~ 12, wherein at least one electrochemical etching parameter selected from the group consisting of electrical current density, electrolyte temperature and/or applied voltage is changing in a predetermined fashion with time during the electrochemical etching process.

25. (canceled) Please cancel claim 25 without prejudice or disclaimer.

26. (currently amended) The method of ~~claim 1~~ making a spectral filter comprising:

providing a substrate wafer of single-crystal semiconductor having a first surface and a second surface,

providing etching start points at a first surface of said semiconductor wafer, and

etching the substrate wafer beginning at said start points to produce a structured layer having pores with controlled depths defined at least partially therethrough, said pores having coherently modulated cross-sections at least over the part of said depth,

wherein at least one layer of substantially transparent material is deposited onto the pore walls.

27. (original) The method of claim 26, wherein each of said at least one layer of substantially transparent material is deposited by a technique selected from the group consisted of chemical vapor deposition, atomic layer deposition, photochemical decomposition and thermal oxidation.

28. (currently amended) The method of ~~claim 1~~ making a spectral filter comprising:

providing a substrate wafer of single-crystal semiconductor having a first surface and a second surface,

providing etching start points at a first surface of said semiconductor wafer, and

etching the substrate wafer beginning at said start points to produce a structured layer having pores with controlled depths defined at least partially therethrough, said pores having coherently modulated cross-sections at least over the part of said depth,

wherein at least one layer of absorptive and/or reflective material is deposited on the pore walls over at least part of the pore depth.

29. (original) The method of claim 28, wherein each of said at least one layer of reflective and/or absorptive material is deposited by a technique selected from the group consisting of chemical vapor deposition, atomic layer deposition, photochemical decomposition, electroplating, electroless plating, die casting and molding.

30. (currently amended) The method of ~~claim 1~~ making a spectral filter comprising:

providing a substrate wafer of single-crystal semiconductor having a first surface and a second surface,

providing etching start points at a first surface of said semiconductor wafer, and

etching the substrate wafer beginning at said start points to produce a structured layer having pores with controlled depths defined at least partially therethrough, said pores having coherently modulated cross-sections at least over the part of said depth,

further including the removal of the unetched remainder of the wafer.

31. (original) The method of claim 30, wherein said removal of the unwanted remainder of the wafer comprises a step selected from the group consisting of Reactive Ion Etching, chemical etching, grinding, mechanical and/or chemical-mechanical polishing.

32. (original) The method of claim 31, wherein the chemically resistant layer is deposited on the pore walls prior to said removal of the unwanted remainder of the wafer.

33. (original) The method of claim 32, wherein said chemically-resistant layer comprises Si3N4 or silicon dioxide having a thickness from about 5nm to about 500nm and is applied by one of the many variants of chemical vapor deposition or thermal oxidation.

34. (original) The method of claim 33, further including removing the chemically resistant layer from the pore walls after the removal of the said unwanted remainder of the wafer.

35. (original) The method of claim 26, including the removal of the unetched remainder of the wafer prior to said deposition of said at least one layer of substantially transparent material onto the pore walls.

36. (currently amended) The method of ~~claim 1~~ making a spectral filter comprising:

providing a substrate wafer of single-crystal semiconductor having a first surface and a second surface,

providing etching start points at a first surface of said semiconductor wafer, and

etching the substrate wafer beginning at said start points to produce a structured layer having pores with controlled depths defined at least partially therethrough, said pores having coherently modulated cross-sections at least over the part of said depth, and

further including coating the first, second or both surfaces of said spectral filter with at least one layer of material intended to suppress the reflection from said surfaces of said spectral filter in at least some wavelength ranges inside the transparency wavelength range of said spectral filter.

37. (original) The method of claim 36 wherein said antireflective structure is disposed by the technique chosen from the group consisting of thermal oxidation, chemical vapor deposition, physical vapor deposition and/or thermal evaporation.

38. (currently amended) The method of ~~claim 1~~ making a spectral filter comprising:

providing a substrate wafer of single-crystal semiconductor having a first surface and a second surface,

providing etching start points at a first surface of said semiconductor wafer, and

etching the substrate wafer beginning at said start points to produce a structured layer having pores with controlled depths defined at least partially therethrough, said pores having coherently modulated cross-sections at least over the part of said depth,

further including sealing said spectral filter with two flat plates of material that is transparent within the transparency range of said spectral filter.

39. (original) The method of claim 37 wherein said sealing step comprises at least one of the group consisting of anodic bonding, thermal bonding, glass frit bonding, brazing or adhesive bonding.

40. (currently amended) The method of ~~claim 1~~ making a spectral filter comprising:

providing a substrate wafer of single-crystal semiconductor having a first surface and a second surface,

providing etching start points at a first surface of said semiconductor wafer, and

etching the substrate wafer beginning at said start points to produce a structured layer having pores with controlled depths defined at least partially therethrough, said pores having coherently modulated cross-sections at least over the part of said depth, and

wherein a roughness suppression procedure is performed subsequently to said etching of the substrate wafer.

41. (original) The method of claim 40 wherein said roughness suppression procedure includes chemical etching of said pore walls.

42. (original) The method of claim 41 wherein said chemical etching takes place in a heated alkaline solution.

43-50 (cancelled) Please cancel claims 43-50 without prejudice or disclaimer.